

MODIS Technical Team Meeting
Thursday, March 27, 2003
Building 33, Room E125

Vince Salomonson chaired the meeting. In attendance were Gary Alcott, Jack Xiong, Bill Barnes, Bob Barnes, Bruce Guenther, Ed Masuoka, Shaida Johnston, Eric Vermote, Robert Wolfe, Dorothy Hall, Michael King, and Wayne Esaias, with Yolanda Harvey taking the minutes.

1.0 Upcoming events

- Ocean Color Meeting, April 15-17, 2003, Miami, Florida, USA.
- IGARSS 2003, July 21-25, 2003, Toulouse, France (abstracts deadline past).
<http://www.igarss03.com/>
- 10th International Symposium on Remote Sensing by The International Society for Optical Engineering (SPIE). September 8-12, 2003, Barcelona, Spain (abstracts deadline past). <http://www.spie.org/info/rs>

2.0 Meeting Minutes

2.1 General Discussion

Salomonson asked what thinking might be occurring about combining Aqua and Terra products in reprocessing. Johnston suggested that we need to get Aqua products validated before we can start combining products. She also expressed some doubt that the new science team would be immediately ready for such an undertaking. Salomonson concluded that we would have to do an Aqua reprocessing first, then a combined reprocessing when that idea gets more developed. Esaias added that Oceans doesn't need two streams, just good Level 3 products. King noted that there is still some confusion over version number differences between Aqua and Terra. Wolfe said that we need to work out a consistent way of naming them, and Salomonson said that at least we need a way of explaining the naming scheme.

Hall and King both noted that they are still working on proposals.

Guenther reported that he was at Ball last week on the ozone NPP review, and was involved in a discussion about TOMS that gave him some ideas about on-orbit sensor degradation. He was reminded during this discussion that TOMS and ERBS data sets and others have involved a history of on-orbit sensor degradation because of high solar-flux activities, so he went back and looked at Xiong's m1 data sets and found that the leveling out of Band 8 gains on Terra may correspond to sunspots. This explanation doesn't work for all bands though, which may mean that degradation is not optical. Vermote said that he thought the problem was mirror contamination, and Guenther replied that when sunspots increase, the thermosphere expands, and atomic oxygen cleans the optics and mirror, causing the leveling out, then afterwards the normal degradation continues. He saw this on a number of instruments, so it may also apply to MODIS.

Justice asked Salomonson if he has received any feedback on the HQ data review, and Salomonson said no.

Salomonson said that per an action item from a recent PIP meeting, there is a need to better organize the process for providing LUT's for Direct Broadcast. The solution seems to be that the LUTs will go up on the MCST ftp site, and then will go to Pat Coronado's web site. He asked if that would resolve the issue, and Masuoka said yes, so long as the LUTs don't get confused. Esaias noted that some Direct Broadcast users also want the institutional-code LUTs as well. Salomonson asked if Coronado would also have those LUTs, and Masuoka said yes. He asked Esaias if he is working on getting the higher-level products to work with IMAP, and Esaias replied that he believes the problem is that they don't use the right version of the L1 code. Masuoka noted that he delivered a substantial number of MODIS PGEs have been delivered to Coronado.

Harvey asked for suggestions of images / data sets to use in educational lithographs, and asked that any suggestions be emailed to her at yharvey@pop900.gsfc.nasa.gov.

2.2 Instrument Status

Xiong reported that he's working on the Aqua Band 21 issue that Justice raised through an early email, and found that there is one detector with a lot of noise coming from it. The issue is being worked on.

2.2.1 Aqua MODIS

Xiong raised an issue to Masuoka about the L1B LUTs deliveries; MCST is asked to deliver the LUTs before previously scheduled April 20, 2003 and the new date is about 20 days in advance instead of the 10 normally needed, but that would mean delivering LUTs that haven't been fully tested. If we are planning on validation by the launch anniversary, we need to plan it out now. Masuoka said that the first priority is to get the Oceans data done; we don't want to mess up that schedule. Xiong asked if the LUT deliveries should be pushed back, and Masuoka said yes. Johnston said that if we really want to finish validating Aqua products, we have to stop constantly submitting updates.

Xiong reported that the SRCA lamp tests have revealed that the #2 lamp is causing the problems. Replacing normal calibration with the backup should solve the problem, and the other three lamps are fine.

2.2.2 Terra MODIS

Xiong reported that the Deep Space Maneuver (DSM) with Terra were successful, and he received some results this morning (March 27, 2003). The data from the DSM may well result in a much more satisfactory quantification of the RVS. When Terra was launched, there were no completely satisfactory measurements available and so it was necessary to use RVS estimates based on Aqua results and results derived from witness samples. Those estimates resulted in stripes in the data and by getting on-orbit RVS, such striping should be substantially reduced. This problem is much reduced on Aqua.

Earlier on-orbit we tried to solve the problem by normalizing the mirror sides, but we can't be certain that we chose the right side to normalize. Masuoka asked if we did all this before the DSM, and Xiong said yes. We did the DSM because it will help determine the radiometry and absolute RVS. The blackbody telemetry temperature was measured, and it was very stable, with 1-2 dn error. Eight different scans were taken during the

maneuver, and all are stable and valid within good FPA temperature range. These data are very useful for RVS analysis. There is a clear, though small, difference between mirror sides 1 and 2. Esaias asked if the effectiveness of the mirror sides changes with wavelengths, and Xiong said yes. The bottom line is that all of the scans agree with each other for the most part, though there is some difference depending on the band. We saw these differences in FM1 testing. Xiong said that he wants to work with Chris Moeller to compare the LUTs of RVS from the DSM and our old data.

Xiong said that these are only preliminary results. Wolfe asked how they compare to Aqua pre-flight data, and Xiong said that it's hard to compare the mirrors of two very different instruments, but they look similar, though with a small percentage of difference. In all, we have good data to run tests on. We should be able to get good RVS data for the PC bands from the DSM. Esaias and Salomonson agreed that this progress is nice to see.

2.3 DAAC

Alcott reported that for the most part things went well on March 26th regarding the DSM, though data reprocessing shut down for most of the day for the DSM. They did a lot of coordinating with EDOS and EMOS. He expressed surprise that there was a data gap about two hours after the maneuver finished, and found that the science data recorder was turned off to make sure that nothing was overwritten, which was a little bit of a problem. Xiong added that Direct Broadcast was unaffected, however. Alcott continued that other than that, they should get a patch from SGI during the first week of April.

King asked Alcott about what looked like missing data in the reprocessing of November 2000 to January 2001 data, and Alcott explained that they ran into a processing problem with daylight savings, and so the stream jumped ahead in data days until the problem got resolved. So, they have two streams running right now. They are working on closing the gaps out while at the same time trying to process the other data and keep a steady rate. They don't want the system to be idle. Alcott assured King that there won't be an issue; they are just making sure that they are maximizing resources and making sure that MODAPS has a steady stream.

2.4 MODAPS

Masuoka reported that reprocessing has reached mid-February 2001, which is right where they expected to be. He said that they are working on alternatives to shrink the schedule if possible (because people would like an August finish): depending on the processing rate, they may be able to finish by September 4th, 2003. Johnston said that they shouldn't push too hard, and that the first week of September is good. Masuoka said that if they have any problems with hardware then the slack they built into the schedule will help. Salomonson noted that there are some Level 3 products in Oceans and Atmospheres that it would be good to reprocess, and Masuoka said that adding those in won't be too much of an extra load. He concluded that he sent Salomonson and Johnston a list of MODAP's top five priorities, and though there is some built-in slack, there's not a lot.

Masuoka asked Alcott if the Synergy 3 software install is having problems, and Alcott said no, they know that Langley had no problems, and GDAAC is going through testing.

Masuoka said that he would very much like to get a 5 km test-set of data for Oceans. Esaias said that he would like to see some temporal subsetting accomplished. Salomonson asked if this would be something like the “golden tiles” Land does, and Masuoka said yes, though there are still some issues to work out. Esaias said that it would be nice to do a day per month with the new files, starting with the November 1, 2002 data day. Masuoka said that he will work on getting the L1A for it and working out the right time-step. It is probably too close to a major reprocessing effort to do now, but he will think about it.

Masuoka noted that Descloitres and Feldman are going to a conference to talk about MODIS and SeaWiFS for educational outreach.

Salomonson asked about the DAO difficulties relative to products from GEOS 4. Masuoka said that they are finding noise in their processing, but the data is probably fine for our processing concerns. These difficulties will affect Steve Running and probably Oceans primary productivity. Esaias said that the real problem would be if they stopped processing data, because then they’d have to use the old version of GEOS data (3).

2.5 Land Discipline

Salomonson asked Vermote if he is still doing analyses of changes in calibration of Aqua, tracking the different epochs, and Vermote said yes; he is communicating with MCST.

2.7 Atmospheres Discipline

King noted progress on the design and specifications for the sampled atmospheres L2 product: there will be 2.8 MB per granule (daytime) and 1.1 MB per granule (nighttime), a low product volume, and they’re going into testing.

3.0 Action Items

3.1 New Action Items

None.

3.2 Old Action Items

3.2.1 King and Kempler to work together on getting ESDTs for the new Atmospheres L2 data product.

Status: Closed.

3.2.2 Kempler to coordinate with Oceans group on creating documentation for the DAAC on the new Oceans L1A data subsets.

Status: Open.

3.2.3 Wolfe to contact Herring about the shopping cart feature for the Earth Observatory website.

Status: Open.

3.2.4 Tech Team to further discuss TRW using MODIS data for validation of the NPP/NPOESS production process.

Status: Open.

3.2.5 Johnston to create possible scenarios of when to reprocess Aqua and start Terra Collection 5.

3.2.6 Conboy to poll Science Team for MODIS Science Team Meeting dates in August 2003.